

IN THE CLAIMS:

The following is a complete list of the claims now pending; this listing replaces all earlier versions and listings of the claims.

1. (Currently Amended) An electron-emitting device comprising:

(A) fiber comprising carbon as a main ingredient, and

(B) ~~a layer made of oxide composed of a material selected from Ti, Zr, Nb, and Al~~  
or a layer made of oxide semiconductor composed of a material selected from the group consisting of Ti, Zr, and Nb,

wherein the fiber comprising carbon as a main ingredient is disposed on the layer and the fiber comprising carbon as a main ingredient partially contains Pd.

2. (Original) The electron-emitting device according to claim 1, wherein the Pd is disposed at a position where the fiber comprising carbon as a main ingredient is in contact with the layer.

3. (Original) The electron-emitting device according to claim 1, wherein the Pd is disposed on an end of the fiber comprising carbon as a main ingredient or on an intermediate point of the fiber comprising carbon as a main ingredient.

4. (Original) The electron-emitting device according to claim 1, wherein the fiber comprising carbon as a main ingredient is grown via Pd particles disposed on the layer.

5. (Original) The electron-emitting device according to claim 1, wherein the fiber comprising carbon as a main ingredient includes a graphen.

6. (Original) The electron-emitting device according to claim 1, wherein the fiber comprising carbon as a main ingredient includes a plurality of layered graphens.

7. (Original) The electron-emitting device according to claim 6, wherein the plurality of graphens is layered in an axial direction of the fiber comprising carbon as a main ingredient.

8. (Original) The electron-emitting device according to claim 1, wherein the fiber comprising carbon as a main ingredient is made of graphite nanofiber, carbon nanotube, amorphous carbon, or a mixture containing more than one of these.

9. (Currently Amended) The electron-emitting device according to claim 1, further comprising:

a first electrode disposed on a surface of a substrate, and

a second electrode disposed on the surface of the substrate and spaced apart from the first electrode,

means for applying a potential higher than the potential applied to the first electrode, to the second electrode,

wherein at least a part of the layer is disposed on the first electrode.

10. (Original) The electron-emitting device according to claim 9, wherein the first electrode is larger in thickness than the second electrode.

11. (Original) The electron-emitting device according to claim 9, wherein the fiber comprising carbon as a main ingredient is disposed farther than the second electrode from the surface of the substrate.

12. (Original) The electron-emitting device according to claim 9, wherein the surface of the substrate has a step height such that the first electrode is higher than the second electrode.

13. (Currently Amended) An electron source comprising a plurality of electron-emitting devices,  
wherein ~~the~~ each electron-emitting device is an electron-emitting device according to any one of claims 1 to 12[[,]] .

14. (Currently Amended) An image-forming apparatus comprising:  
an electron source according to claim 13, and  
an anode ~~where~~ with which an electron emitted from the electron source comes into collision.

15. (Original) The image-forming apparatus according to claim 14, wherein the anode has a phosphor.

16. (Currently Amended) An electron-emitting device comprising:

(A) first and second electrodes disposed with a gap on a surface of a substrate,

(B) a plurality of fibers each comprising carbon as a main ingredient electrically connected with the first electrode, and

(C) means for applying a voltage higher than the voltage applied to the first electrode, to the second electrode,

wherein ends of the plurality of fibers each comprising carbon as a main ingredient are higher than a surface of the second electrode from the surface of the substrate, and

~~a layer made of oxide composed of a material selected from Ti, Zr, Nb, and Al or a~~ layer made of oxide semiconductor composed of a material selected from the group consisting of Ti, Zr, and Nb is disposed between the first electrode and the plurality of fibers each comprising carbon as a main ingredient.

17. (Original) The electron-emitting device according to claim 16, wherein the layer and the plurality of fibers each comprising carbon as a main ingredient are connected to each other via a catalyst material.

18. (Currently Amended) The electron-emitting device according to claim 17, wherein the catalyst material is a material selected from the group consisting of Pd, Ni, Fe, Co, and an alloy of these.

19. (Original) The electron-emitting device according to claim 16, wherein the first electrode is larger in thickness than the second electrode.

20. (Currently Amended) An electron source comprising a plurality of arranged electron-emitting devices,  
wherein ~~the~~ each electron-emitting device is an electron-emitting device according to any one of claims 16 to 19.

21. (Currently Amended) An image-forming apparatus comprising:  
an electron source, and  
an image-forming member,  
wherein the electron source is an electron source according to claim 20.

22. (Currently Amended) An electron-emitting device comprising:  
(A) fiber comprising carbon as a main ingredient,  
(B) ~~a layer made of oxide composed of a material selected from Ti, Zr, Nb, and Al~~  
~~or~~ a layer made of oxide semiconductor composed of a material selected from the group consisting of Ti, Zr, and Nb,  
wherein the fiber comprising carbon as a main ingredient is disposed on the layer,  
and  
the fiber comprising carbon as a main ingredient includes a plurality of layered graphens.

23. (Original) The electron-emitting device according to claim 22, wherein the plurality of graphens are layered in an axial direction of the fiber comprising carbon as a main ingredient.

24. (Original) The electron-emitting device according to claim 22, wherein the fiber comprising carbon as a main ingredient is grown via Pd particles disposed on the layer.

25. (Original) The electron-emitting device according to claim 22, wherein the fiber comprising carbon as a main ingredient contains Pd.

26. (Currently Amended) An electron source comprising a plurality of electron-emitting devices,

wherein ~~the~~ each electron-emitting device is an electron-emitting device according to any one of claims 22 to 25.

27. (Currently Amended) An image-forming apparatus,

the apparatus comprising an electron source and an image-forming member; ,  
wherein the electron source is an electron source according to claim 26.

28. (Withdrawn) A method for manufacturing an electron-emitting device, which includes fiber comprising carbon as a main ingredient, comprising the steps of:

(A) providing a layer made of oxide composed of a material selected from Ti, Zr, Nb, and Al or a layer made of oxide semiconductor composed of a material selected from Ti, Zr, and Nb,

(B) disposing catalyst particles on the layer, and

(C) heating the substrate on which the catalyst particles are disposed in an atmosphere containing carbon compound.

29. (Withdrawn) The method for manufacturing the electron-emitting device according to claim 28, wherein the carbon compound is hydrocarbon gas.

30. (Withdrawn) The method for manufacturing the electron-emitting device according to claim 28, wherein the layer is formed on the electrode disposed on the substrate.

31. (Withdrawn) The method for manufacturing the electron-emitting device according to claim 28, wherein the layer is formed by the step of forming a conductive layer made of a material selected from Ti, Zr, Nb, and Al on the substrate and oxidizing a surface of the conductive layer.

32. (Withdrawn) The method for manufacturing the electron-emitting device according to claim 31, wherein the step of oxidizing the surface of the conductive layer is carried out by the step of forming a material of the catalyst particles on the surface of the conductive layer and oxidizing the material.

33. (Withdrawn) The method for manufacturing the electron-emitting device according to claim 28, wherein the catalyst particles are made of a material selected from Pd, Ni, Fe, Co, and an alloy of these.

34. (Withdrawn) A method for manufacturing an electron-emitting device, which includes a plurality of electron-emitting devices,

wherein the electron-emitting device is manufactured by the manufacturing method according to any one of claims 28 to 33.

35. (Withdrawn) A method for manufacturing an image-forming apparatus, which includes an electron source and an image-forming member,

wherein the electron source is manufactured by the manufacturing method according to claim 34.



AMENDMENTS TO THE DRAWINGS:

The attached sheets of drawings include changes to Figs. 13 and 14. These sheets replace the original sheets including Figs. 13 and 14. In each of Figs. 13 and 14, the legend --Prior Art-- has been added.

Attachment: Replacement Sheets